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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/764,254      | 01/19/2001  | Takemi Hasegawa      | 50212-186           | 5674             |

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|          |
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| EXAMINER |
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PRASAD, CHANDRIKA

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2839     |              |

DATE MAILED: 08/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                              |
|------------------------------|------------------------|------------------------------|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b>          |
|                              | 09/764,254             | HASEGAWA ET AL.<br><i>MC</i> |
|                              | <b>Examiner</b>        | <b>Art Unit</b>              |
|                              | Chandrika Prasad       | 2839                         |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 19 January 2001.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-15 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-15 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 19 January 2001 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.
 

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage—application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

|  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5,7</u> | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Drawings*

✓ 1. Figures 16 and 22 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

✓ 2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the optical path including an optical fiber with a positive chromatic dispersion must be shown or the feature(s) canceled from Claim 11. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

4. The disclosure is objected to because of the following informalities:

✓ • Page 5, line 9: "adopts" should be changed to -- adopt -- .

✓ • Page 5, line 11: Ge should be defined. *Germanium*

✓ • Page 19, line 12: The first occurrence of "the" should be deleted.

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- ✓ • Page 7, line 12 recites 2% but does not specify % of what.
- ✓ • Page 7, line 21 recites -0.1% but does not specify % of what
- Page 2, lines 9-11: What are side members of the equation?
- ✓ • Page 6, lines 23-25: What is four-fold rotational symmetry?
- ✓ • Page 7, lines 10-17: If the difference between the refractive index of the core and the outer cladding is only 2%, what is meant by relatively low. Does it mean just a little lower or very low.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claim recites the ratio of power through the sub medium of outer cladding to total power to be no more than 1%. But such a ratio has not been described in the specification. Page 8, lines 1-4 of the specification recites the ratio of power through the outer cladding to the total power to be no more than 1%.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 6-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6 and 7 recite “%” but does not specify % of what.

Claim 8 recites the total propagating power, but does not specify whether the total power through the fiber or the outer cladding.

Claims 9 and 10 recite chromatic dispersion at a given wavelength but do not specify any value of the wavelength. Since chromatic dispersion (see DiGiovanni Figure 6) depends on the wavelength, omitting the value of the wavelength makes these claims indefinite.

#### ***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-2 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by DiGiovanni et al (5,802,236).

DiGiovanni (Figures 1-6) shows an optical fiber having a core region 51 and at least three layers of cladding 52, 53, 53 surrounding the core region forming a four-fold rotational symmetry (four concentric layers) wherein the refractive index of cladding region 52 is less

than the refractive index of adjacent layers 53, 53 and the cladding regions are provided with sub medium regions (voids) with refractive index lower than that of the main medium (silica) constituting the cladding region. DiGiovanni further discloses a plurality of claddings, some of them made of homogeneous medium (solid glass) and the refractive index of the core region being greater than that of the cladding regions. Figure 5 shows the cross sectional area of the sub medium to be uniform in each cladding region but differs from one cladding region to the other cladding region. Figures 2 and 5 shows a sub medium having a hexagonal cell 23, 52. Figure 6 shows the chromatic dispersion of the optical fiber at a number of wavelengths. Also see Column 3, lines 12-37, 53-65; Column 5, lines 57-60; Column 6, lines 3-9, Column 6, lines 3-9; Column 7, lines 47-54; Column 8, lines 37-44 and Column 10, lines 1-12 for description.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3-11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over DiGiovanni et al (5,802,236).

DiGiovanni shows all the features of these claims except specific values or relative values of the refractive indices, certain operating parameters such as optical power and wavelengths and the use of another fiber with positive chromatic dispersion. DiGiovanni

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discloses that the refractive index of a cladding region can be adjusted to a desired value by adjusting the sub medium region. Furthermore, DiGiovanni discloses the use of another fiber for compensating dispersion to be known. It would have been obvious to one having ordinary skill in the art at the time of the instant invention to provide these features and select certain values and parameters for the DiGiovanni fiber because it has been held to be within the general skill of a worker in the art to select a known material and operating parameters on the basis of its suitability for the intended use.

***Contact Information***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chandrika Prasad at (703) 308-0977.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus, can be reached at (703) 308-3119. The fax number for this Group is (703) 872-9318 (general) and (703) 872-9319 for after-final.

Any inquiry of a general nature should be directed to the Group receptionist at (703) 308-1782.



Chandrika Prasad

August 22, 2002